Winlink 2000 Radio E-mail Overview
&
RMS Express E-mail client intro

Winlink2000 system overview

- **A global messaging service**

From the beginning, **Winlink2000** was designed in a "Simple Mail Transfer Protocol" format so that it could provide direct radio users and Internet third-party users seamless, transparent email services with attachments of reasonable (_small_) size, efficiently and easily.

- Allows any mobile or portable operation to interface into the Internet e-mail system from virtually anywhere in the World over the various separate classes of users - Army MARS or the Amateur Service spectrum.

- Email accessible thru radio to internet gateways on HF, VHF, UHF.

- Peer to Peer messaging mode between client stations.

Common WL2K speeds _over radio_ are 300, 500, 1200, 1600 and 9600 baud...plenty fast for text, not fast for file attachments like pictures. If attachment is necessary, less than 3kb in size works OK.

Winlink2000 system overview

- **Winlink2000** is a worldwide radio messaging system that, to conserve radio spectrum, takes advantage of the Internet where possible. Winlink2000 has been assisting the maritime community, NOAA, the United Nations, the US. Coast Guard and other agencies for over 8 years now. It is gaining attention of the greater emergency communications community due to recent domestic disasters.

- Several years ago, the Department of Homeland Security suggested to the **ARRL** that the Amateur community should design and maintain a national digital network for emergency communications purposes. Winlink2000 was their network of choice. Today, many ARRL Amateur Radio Emergency Service® (ARES) and Radio Amateur Civil Emergency Service (RACES) groups have been deploying Winlink2000 across the country.

Winlink2000 system overview

- **Internet, HF & VHF/UHF components :**
  The **Winlink2000** system is a "star" based network containing 5 mirror image, redundant COMMON MESSAGE SERVERS (**CMS**); located in San Diego (USA), Washington DC (USA), Wien (Austria), Halifax (Canada), and Perth (Australia). These ensure that the system will remain in operation should any chunk of the Internet become inoperative.

  Traffic goes in and out between the **CMS** and the Internet email recipient, and between the end users and the RADIO MESSAGE SERVER (**RMS**) gateways. Multiple Radio-to-Radio addresses may be mixed with radio-to-internet e-mail addresses, allowing good sender to recipient flexibility.
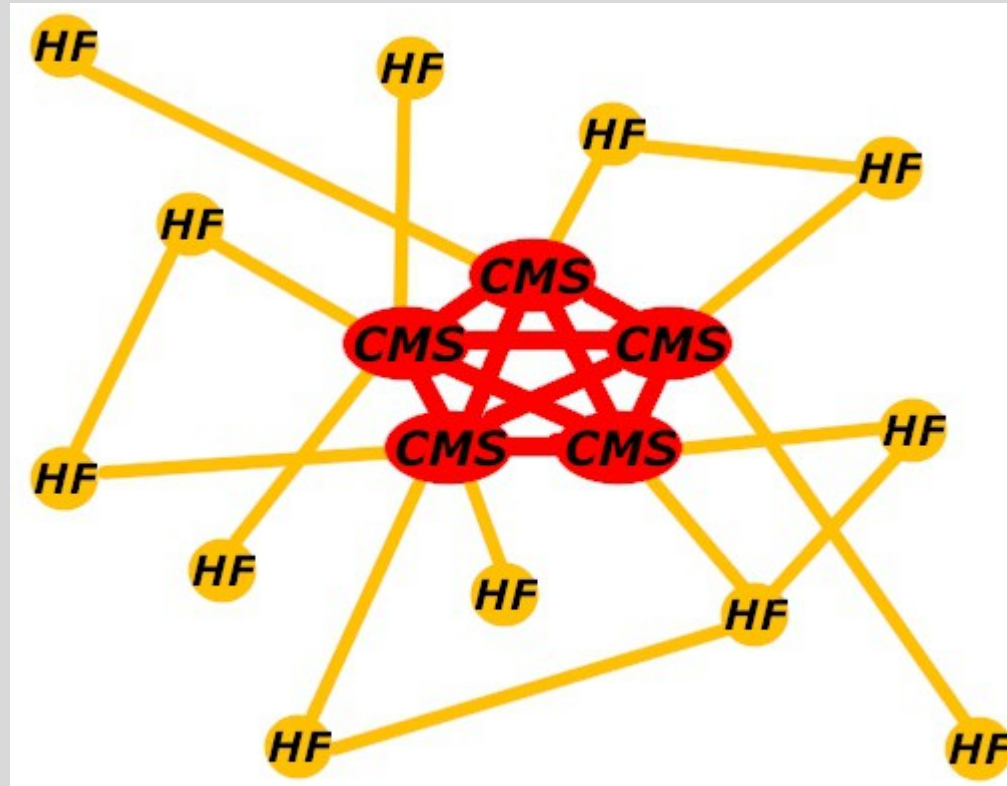
Winlink2000 system overview

Winlink2000 appears complex, but each layer is simple.
This image will grow as additional layers are added,
representing the various Winlink components.

Start with 5 well-connected, mirror image, fully-redundant
COMMON MESSAGE SERVERS (CMS) for the core;
located in San Diego USA, Washington DC USA, Wien Austria, Halifax CA,
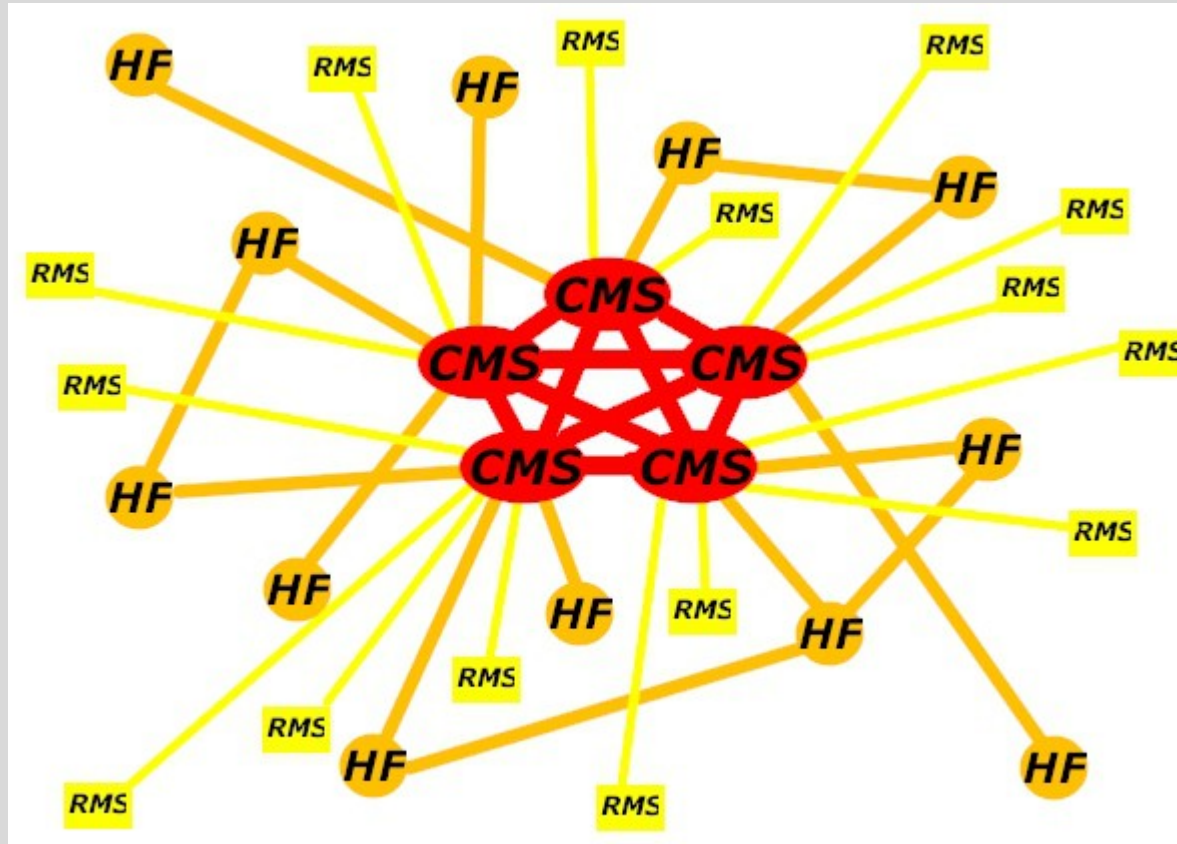and Perth Australia.

These connect **Winlink2000** to the Internet and handle regular email
Communications for the registered winlink.org users around the world.
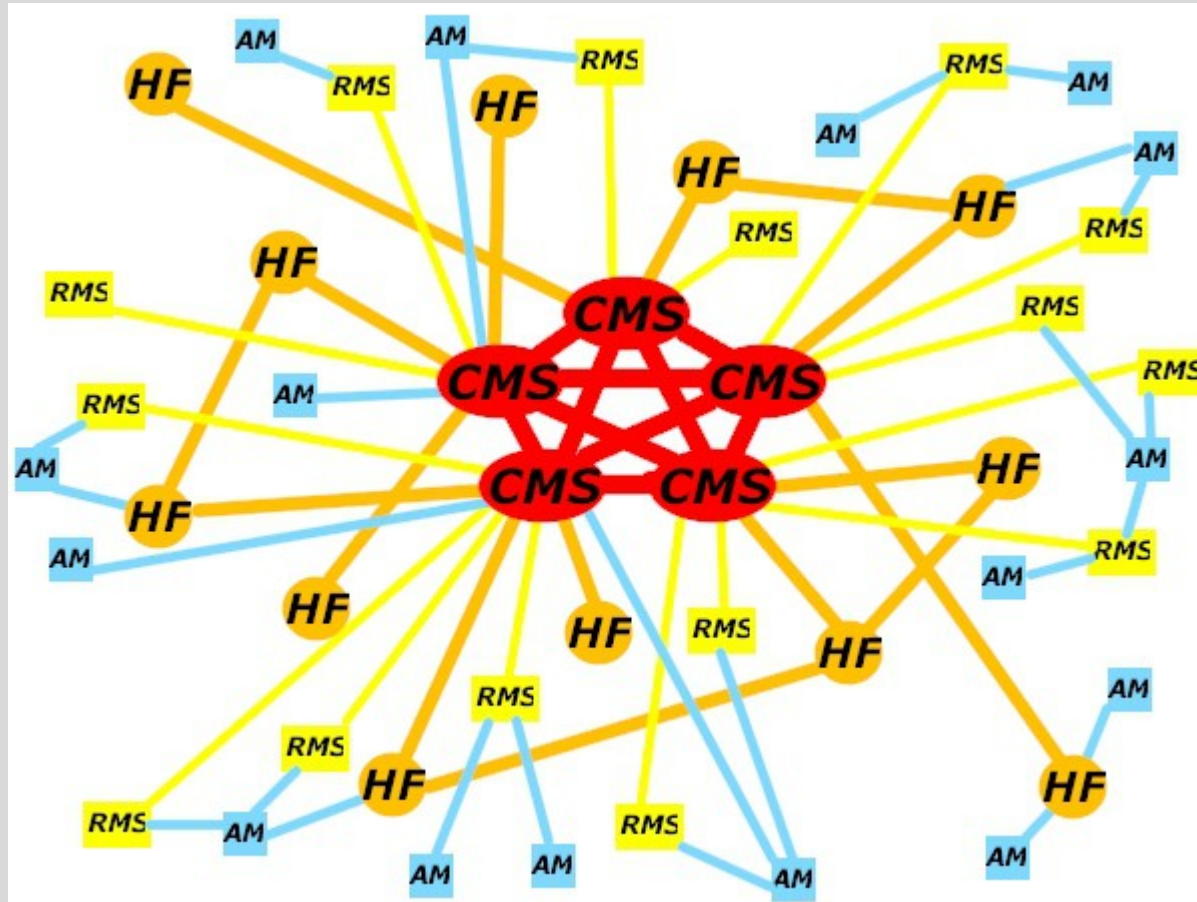
Winlink2000 system overview

Add HF (tan) Gateways to connect via HF radios or the Internet to the core…

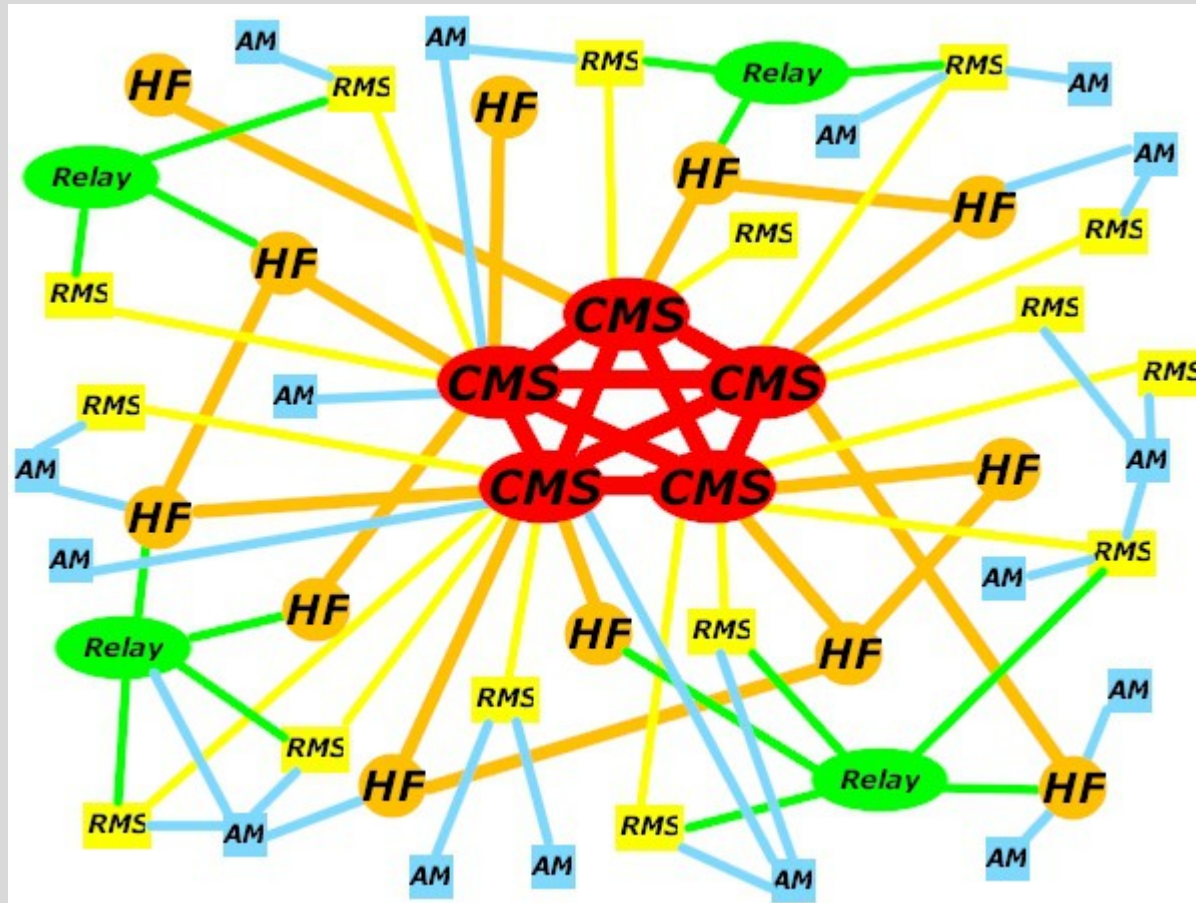# Winlink2000 system overview

Add RMS Gateways (yellow), that connect VHF/UHF via Internet directly to the core…
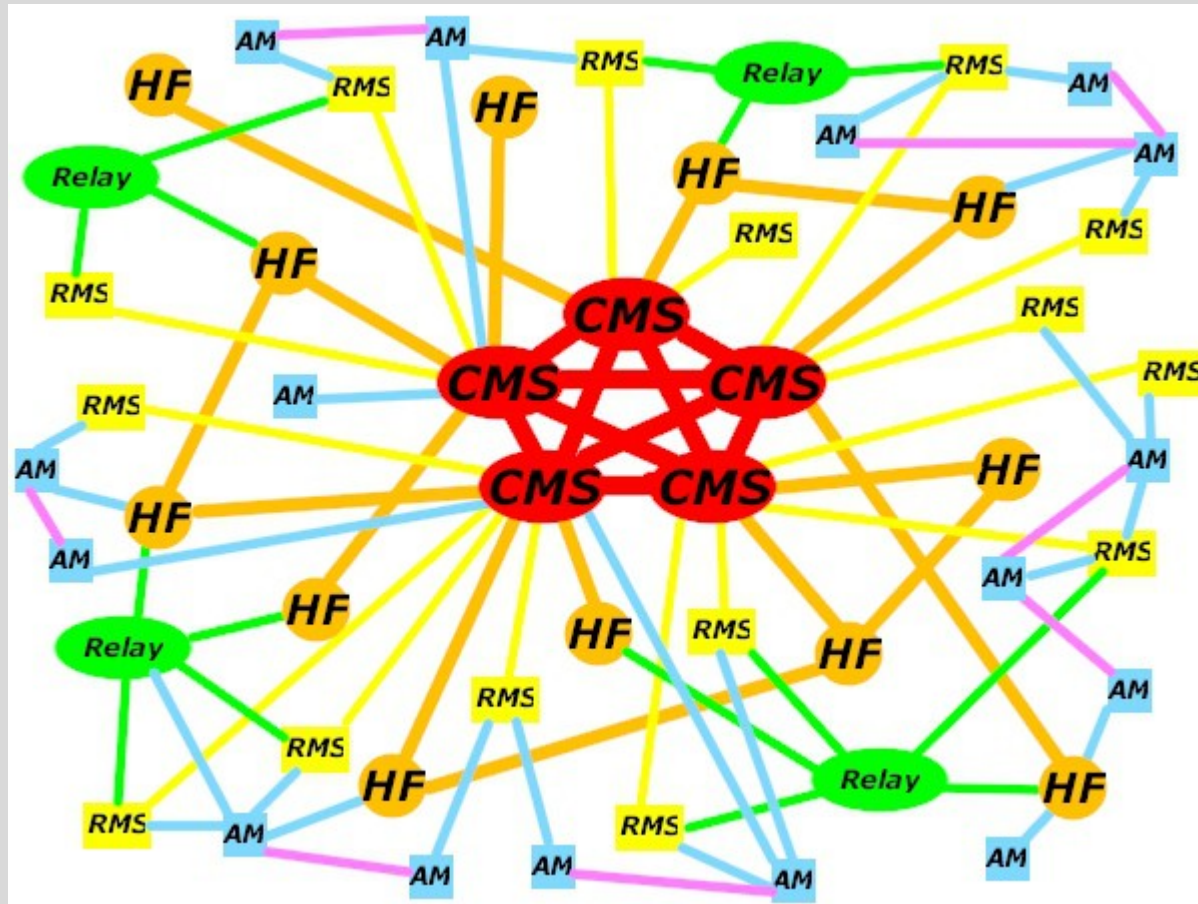
Winlink2000 system overview

Add RMS Express Client stations (Blue), that can connect end users in many ways…

Winlink2000 system overview

Add Relay/digipeater stations (Green), for efficiency and to handle brief outages.

Winlink2000 system overview

Add Peer-to-Peer for local traffic (Purple) . . . and the map is complete.
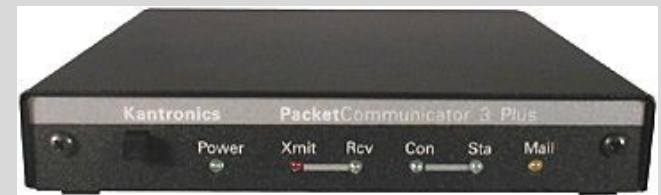
WL2K Gateways & Relays

- The basic idea is to get your (email) message to the internet, and allow retrieval of messages sent to you.

- Access thru various gateways on HF, VHF, D-Star, and even APRS.

- A 'Relay' program allows a gateway station to hold the messages during an outage for relay later, or by way of an alternate HF station… The relay software can even allow local traffic to deliver locally.

- Currently, there are more than 15,000 radio users on all the classes of users and approximately 100,000 Internet recipients. Monthly traffic averages over 150,000 messages. The system is in place, and is working.!.!.
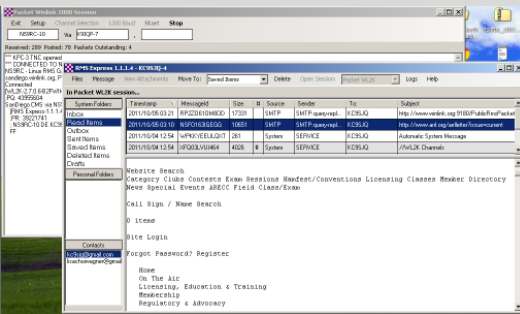
WL2K Client Station Setup

- Radio Interface to Computer

For WL2K access thru a local VHF packet gateway

-TNC device or Terminal Node Controller, VHF transceiver station and a PC (Windows).

- – Some TNC's are RS-232 (serial) interface only. Possibly require a Serial to USB Adapter to use with a newer PC.
- – Some newer TNC's have a built in USB interface.
- – Transceiver with built in TNC.

WL2K Client Station Setup

PC Running
RMS Express

TNC

VHF Radio
Station

Serial cable, USB cable or
Serial w/USB adapter

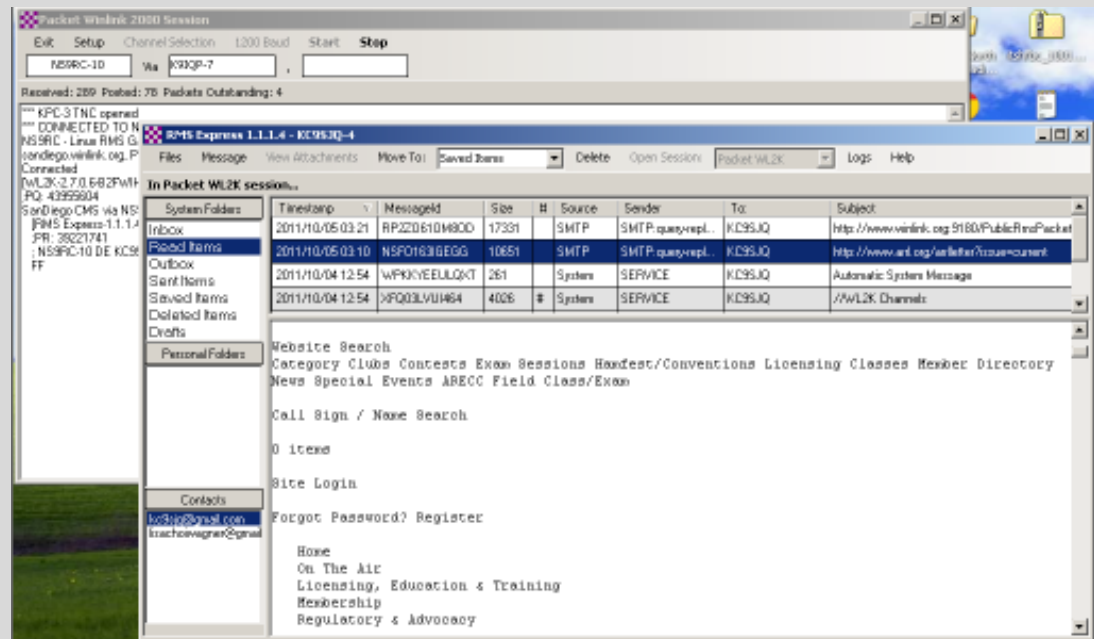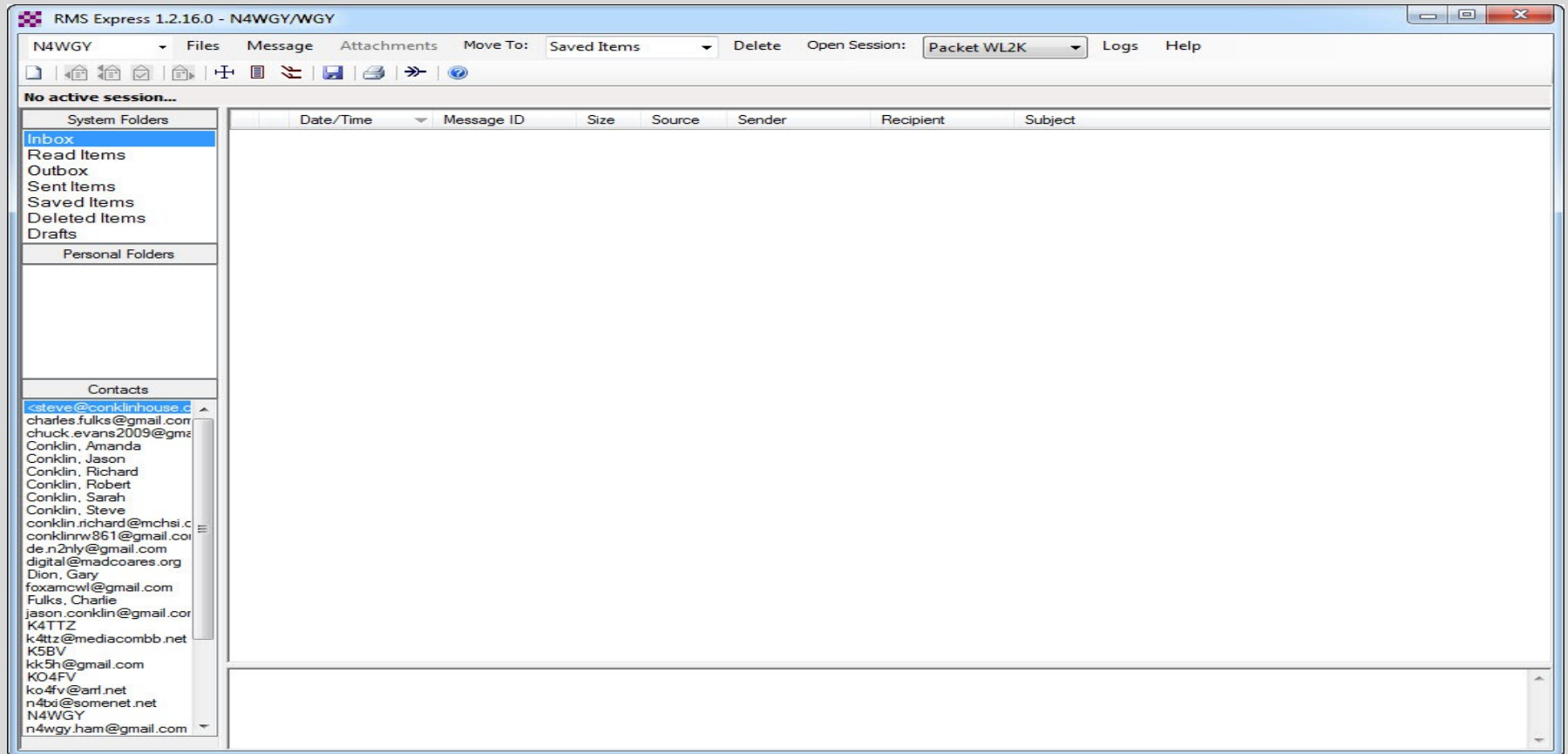Mic/Spkr Audio, PTT

WL2K Email Account Creation

- WL2K Account _must_ be created via a radio.

- The first time you connect to a WL2K gateway/CMS via radio it creates your account… BOOM…easy.

- Once established over the air, you can originate an email message thru internet or your radio which can be delivered to any valid internet email or station address worldwide.

RMS Express Client program

- Familiar interface, multi-mode capable:
  - Look and feel to common email clients like Gmail, Outlook Express or Thunderbird.
  - Shows an inbox, an outbox, Sent Items, custom folders, etc. and has an address book.
  - RMS Express is Simple and clean to install and use.
  - Freeware!

RMS Express Client Software

- ## LETS DO A LIVE INSTALL AND SETUP DEMO !

LOCAL VHF WINLINK GATEWAY
N4WGY-10 on 145.09 MHz, 1200 baud packet

- 24/7/365 PUBLIC ACCESS
- HIGH QUALITY, RUGGED STATION COMPONENTS
- HARDENED FACILITY BACKUP POWER GENERATORS
- LARGE STATION UPS FOR SHORT TERM POWER OUTAGES
- HARDENED INTERNET INFRASTRUCTURE
- LOCATED ON REDSTONE ARSENAL
- PLEASE USE THIS VALUABLE ASSET!
- PRACTICE OF USE = DISASTER
  PREPAREDNESS

LOCAL VHF WINLINK GATEWAY
N4WGY-10 on 145.09 MHz, 1200 baud packet

HEARTFELT THANKS TO THE FOLLOWING ENTITIES AND PEOPLE FOR HELPING TO GET THIS STATION ON THE AIR BY DONATING THEIR VALUABLE TIME AND EQUIPMENT.

GIGAPARTS – Huntsville AL
BILL ADAMS - KB4NEI
GARY DION - N4TXI
JASON CONKLIN - N2NLY
ALAN SEIG - WB5RMG
JACOB MITCHELL - VOLUNTEER

LINKS

There are excellent tutorials available online for basic and advanced setup & use of the RMS Express Winlink 2000 client software.

- "How to get a Winlink RADIO e-mail account"

www.winlink.org/GetStarted

- Look for video titles "RMS Express – Part 1", thru "RMS Express – Part 5"

www.winlink.org/K4REF_videos

- WL2K User software download links

http://www.winlink.org/ClientSoftware
Or
ftp://autoupdate.winlink.org/User%20Programs